

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 June 2002 (27.06.2002)

PCT

(10) International Publication Number  
**WO 02/49507 A1**

(51) International Patent Classification<sup>7</sup>: **A61B 5/00**,  
5/15, 10/00

Place, Mendota Heights, MN 55118 (US). **MCALÉER, Jerome**; 52 Nobles Close, Grove, Oxfordshire (GB).

(21) International Application Number: PCT/GB01/05634

(74) Agent: **FRANK B. DEHN & Co.**; 179 Queen Victoria Street, London EC4V 4EL (GB).

(22) International Filing Date:  
19 December 2001 (19.12.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0030929.4 19 December 2000 (19.12.2000) GB

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

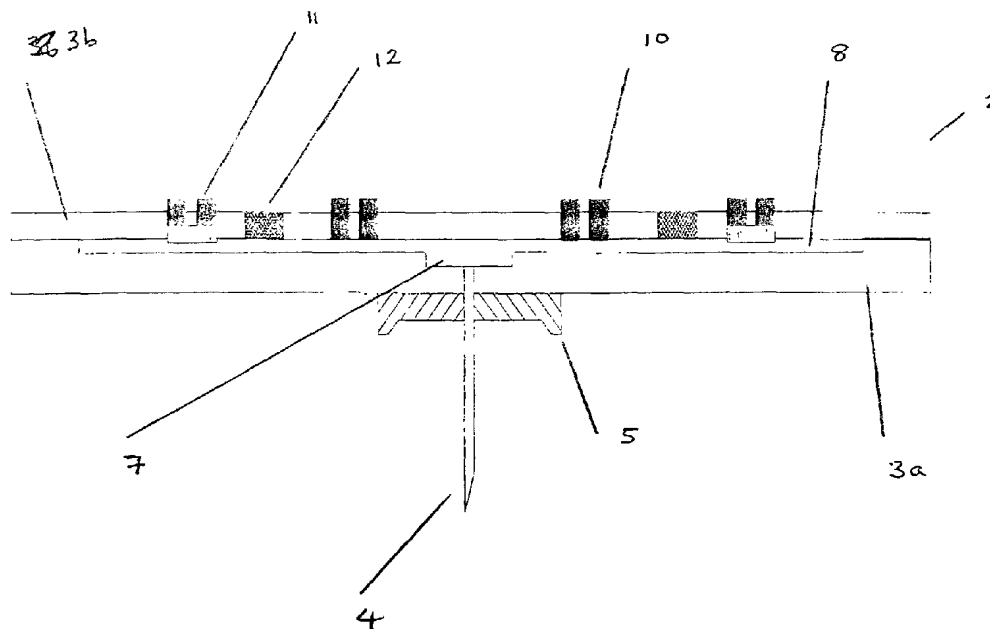
(71) Applicant: **INVERNESS MEDICAL LIMITED** [GB/GB]; Beechwood Park North, Inverness IV2 3ED (GB).

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors: **STIENE, Matthias**; 66 Crown Drive, Inverness IV2 3QG (GB). **RICHTER, Tanja**; 6 Paton Street, Inverness IV2 4SN (GB). **ALLEN, John**; 1020 Brompton

[Continued on next page]

(54) Title: ANALYTE MEASUREMENT



(57) Abstract: A glucose sensor in the form of a skin patch (2) has a microneedle (4) which painlessly penetrates the skin to draw out interstitial fluid. The interstitial fluid passes to a common entrance port (7). A series of microchannels (8) is provided on the skin patch. The fluid drawn onto the patch is selectively switched between a number of microchannels (8) by means of electro-osmotic pumps (10) and hydrophobic gates (12). Each microchannel (8) has an electrochemical detector (11) for sensing glucose concentration. Also disclosed is a monolithic device with an integrated lance (83).



WO 02/49507 A1



**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*